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Supporting Information

Creation of Conductive Graphene Materials by Bacterial Reduction Using *Shewanella Oneidensis*

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Electronic Supplementary Information

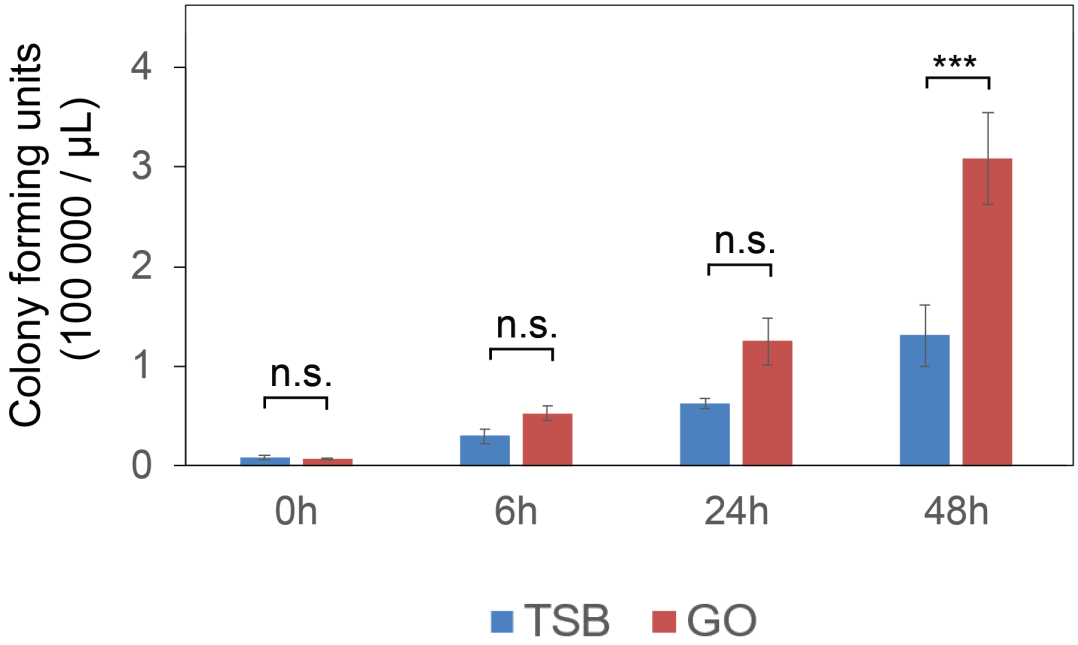

Fig. S1 Colony forming units (CFU) during the bacterial reduction of graphene oxide. During bacterial reduction of graphene oxide (GO) in solution, samples were removed after 0, 6, 24, and 48 hours, and the concentration of colony forming units was determined ("GO" condition). A control condition without GO was assessed ("TSB" condition), as well as a sample containing no bacteria, which consistently displayed no colony forming units (not shown). The sample containing GO displayed significantly higher colony forming units after 48 hours compared to the no-GO control (One-way ANOVA with Tukey PostHoc test 48h_GO to 48h_TSB: $p = 0.0016$, $n=6$). All significant differences are denoted with (***) for highly significant (p-value < 0.01). Error bars are the standard error of the mean.

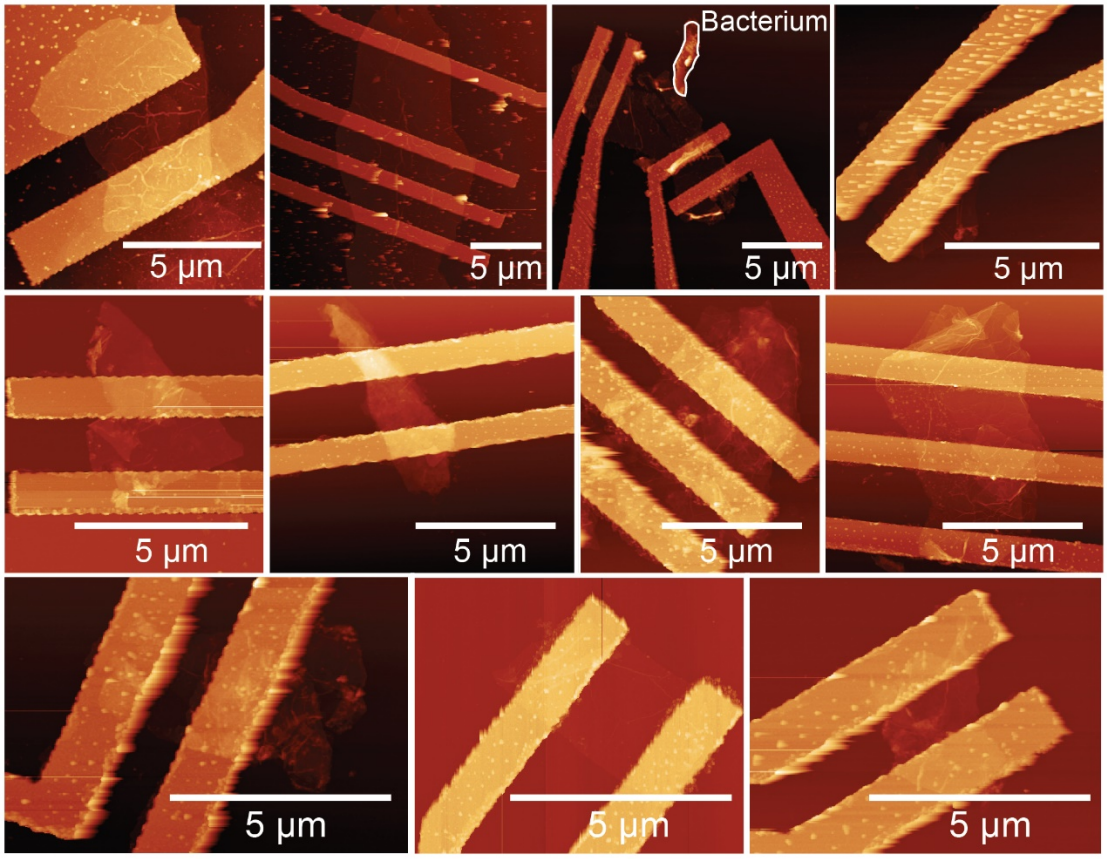

Fig. S2 AFM scans of microbially-reduced graphene oxide (mrGO) flakes. In only one out of eight flakes (top row, 3rd from the left) was a bacterium (highlighted with white borders) visible. The size and shape of the bacterium was atypically large and unhealthy.

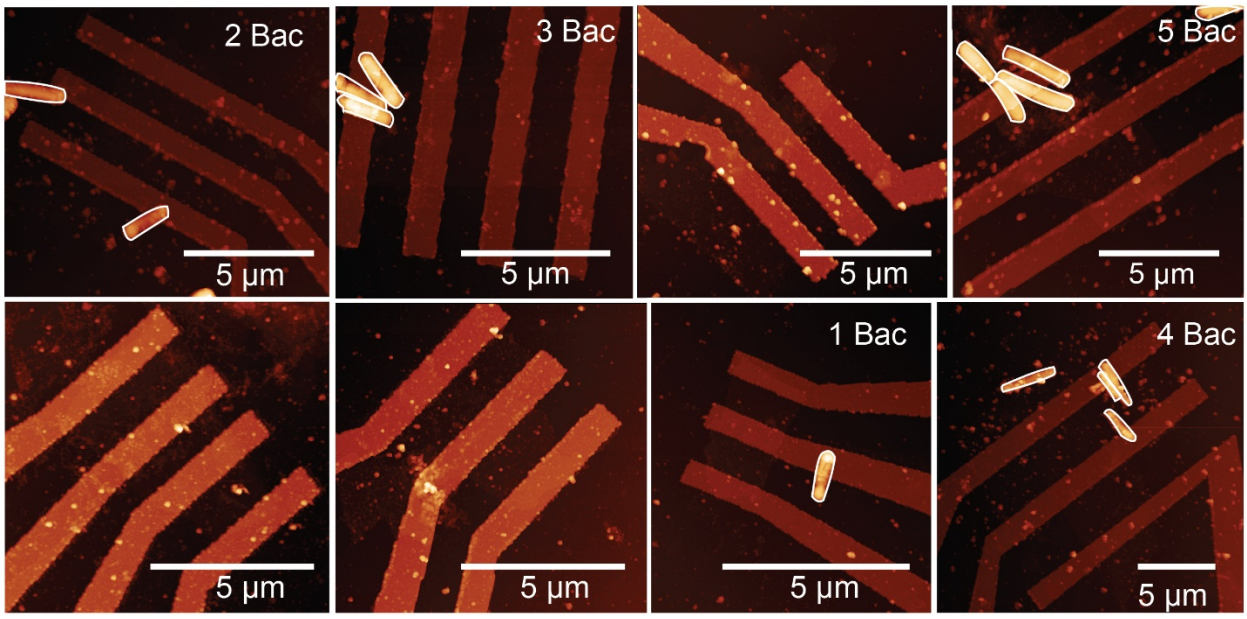

Fig. S3 AFM scans of the patterned graphene oxide (patGO) flakes. Multiple flakes had bacteria (highlighted with a white border) on their upper surface. These remaining bacteria are likely due to the reduced washing steps and the deposition of the entire device into a liquid filled with bacteria.